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**Richard Evan Schwartz\***, Brown University, Providence, RI 02912. *Modern scratch paper: Graphical explorations in geometry and dynamics* Preliminary report.

Over the years I've made a number of graphical user interfaces whose purpose is to help understand problems in geometry and dynamics. These interfaces let you discover patterns and organize information in a way that would be practically impossible using pencil and paper. Sometimes they also facilitate computational proofs that are a kind of deal with the devil: They give a rigorous proof for an appealing result without offering conventional insight into why the result is true. In this talk I will show some of my graphical user interfaces and explain the mathematics behind them. (Received September 12, 2016)